for App 10/691598

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Japanese Published Unexamined (Kokai) Patent Publication No. 04-262345; Publication Date: September 17, 1992; Application No. 03-003417; Application Date: January 16, 1991; Int. Cl.[5]: H01J 29/76; Inventor: Yoriichi Koizumi; Applicant: Mitsubishi electric Corporation; Japanese Title: Henkou Yookuyou Koa (Core for Deflection Yoke)

[Title of Invention]

Core for Deflection Yoke

[Abstract]

[Purpose]

To obtain a core for a deflection yoke that does not generate cracks on the periphery of a clip groove when a molded article obtained by applying a pressure molding to a ferrite powder is sintered while being placed on a saga [Translator's Note: the word is not located in any dictionaries] even if an inner distortion occurs due to a nonuniform density on the periphery of the molded article.

[Constitution]

This is a trumpet-shaped core for a deflection yoke that consists of a splitting groove and a clip groove, wherein the thickness in the periphery of the clip groove is made smaller than the thicknesses of other locations.

[Claim]

[Claim 1]

A core for a deflection yoke, characterized in that at a deflection yoke core that is in a trumpet shape and that consists of a splitting groove and a clip groove, the thickness in the periphery of the clip groove is made smaller than the thicknesses of other locations.

[Detailed Description of the Invention]

[0001]

[Field of Industrial Application]

This invention pertains to a core for a deflection yoke that is used for a cathode ray tube of a television set. In particular, the invention relates to a trumpet-shaped core for a deflection yoke that is split along a splitting groove.

[0002]

[Prior Art]

Fig.4 is a cross-sectional front view of prior art deflection yoke core, cut along an AA line. Fig.5 illustrates a lower surface. Fig.6 is a cross-sectional view illustrating a sintered state.

[0003]

In the drawings, reference number 1 refers to a core for a trumpet-shaped deflection yoke made of a sintered body of a ferrite powder; 2 to a splitting groove that is formed on the opposed surface of the outer surface to the inner surface of the core 1 and that is used for splitting the core 1; 3 and 4 to split cores split by the splitting groove 2; 5 and 6 to clip grooves formed on the cores 3 and 4 on both sides of the splitting groove 2;

7 to a binding clip with a C-shaped cross-sectional surface; 8 to a heat resistant alumina saga; 9 to a hole for supporting the saga.

[0004]

The deflection yoke core 1 is split into halves as the split cores 3 and 4 using the splitting groove 2 after a sintering has been applied. After a coil has been applied, the split cores 3 and 4 are combined together to make one piece. The piece is used integral with the corresponding clip grooves 5 and 6 while they are gripped with the clip 7.

[0005]

A producing method for the deflection yoke core 1 is operated as follows. A ferrite powder is pressure-molded using a die with projections corresponding to the splitting groove 2 and the clip grooves 5 and 6 formed in advance to form a molded article having the splitting groove 2 and the clip grooves 5 and 6. This molded article is sintered at a high temperature at several hundred degrees while it is inserted and placed in a support hole 9 of the heat resistant alumina saga 8 to obtain the deflection yoke core 1. After the sintering, bringing a gad having a wedge-shaped tip into contact with the splitting groove 2, the splitting groove is split into halves by giving an impact with a hammer from above.

[0006]

[Problem to Be Solved by the Invention]

However, since such prior art deflection yoke core 1 is produced by the pressure molding of the ferrite powder, the molding density around the splitting groove 2 and the clip grooves 5 and 6 of the molded article becomes nonuniform to easily generate a distortion inside. Due to the distortion, when the molded article is placed in the support hole 9 of the saga 8, the corners of the clip grooves 5 and 6 easily crack by an impact. Furthermore, because the molded article slides off by a contraction while the outer surface is in contact with the saga 8 during the sintering, a periphery of the clip grooves 5 and 6 that demonstrates lower strength cracks, resulting in a difficulty in the joining of the split cores 3 and 4.

[0007]

The present invention is produced to eliminate the aforementioned disadvantages of prior art deflection yoke core and aims to obtain a core for a deflection yoke that does not generate any cracks on the periphery of clip grooves.

[0008]

[Measures for Solving the Problem]

The core for a deflection yoke of the invention is characterized in that at a deflection yoke core that is in a trumpet shape and that consists of a splitting groove and a clip groove, the thickness in the periphery of the clip groove is made smaller than the thicknesses of other locations.

[0009]

[Effect]

At the deflection yoke core of the invention, since the thickness of the periphery of the clip grooves is smaller than the thicknesses of other locations, the density around the clip grooves of the molded article becomes nonuniform by the pressure molding of the ferrite powder. Thereby, even if an inner distortion occurs, when the molded article is sintered while being placed in the saga, the periphery of the clip grooves will not be brought into contact with the saga. Accordingly, at the placement and sintering of the molded article in the saga, the periphery of the clip grooves will not collide from the saga or generate cracks by being worn due to a contraction.

[0010]

[Working Example(s)]

The working examples of the invention are described hereinbelow with reference to the drawings. Fig.1 is a cross-sectional front view cut along a BB surface of a deflection yoke core as in a working example, and Fig.2 a cross-sectional view cut along a CC surface thereof. In the drawings, the same reference numbers indicate the same or equivalent components as in Fig.4 to Fig.6. The dashed line indicates the shape of prior art deflection yoke core.

[0011]

The deflection yoke core 1 is constituted as almost similarly to as in Fig.4 to Fig.6. Thickness t of the peripheries of the splitting groove 2 and the clip grooves 5 and 6 is smaller than thickness T of other locations. At the working example, larger and smaller

outer diameter portions of the core 1 are at the same size as those of prior art core. The thickness is gradually reduced from the outside of the clip grooves 5 and 6 whereas the periphery thereof is in a recessed shape.

[0012]

The deflection yoke core 1 is produced as follows. An article is molded using a ferrite powder by a pressure molding means so that the thickness of the peripheries of the splitting groove 2 and the clip grooves 5 and 6 becomes smaller than the thicknesses of other locations. The molded article is inserted and placed in the support hole 9 of the saga 8. Because the periphery of the clip grooves 5 and 6 does not come into contact with the saga 8, the density of that part becomes nonuniform. Thereby, even if an inner distortion occurs, no cracks occur at the placement and sintering of the molded article.

[0013]

The deflection yoke core 1 as produced above is split with the splitting groove 2. After winding a wire, the split cores 3 and 4 are joined. The clip 7 is then mounted on the clip grooves 5 and 6 to integrate it. No cracks occur on the periphery of the clip grooves 5 and 6, thereby obtaining an easy and reliable joining with the clip 7. As the thicknesses of the larger and smaller outer diameter portions of the core 1 are also uniform, the magnetic property does not change.

[0014]

Fig.3 is a cross-sectional view illustrating the other working example, cut along a line equivalent to the BB line of Fig.1. At the working example, the thickness of both ends of the clip grooves 5 and 6 is the same as that of the ends of prior art clip grooves, and the periphery is smoothly depressed.

[0015]

As in the above description, the portion to be a smaller thickness and the shape are not limited to the examples illustrated in the drawings alone.

[0016]

[Advantageous Result of the Invention]

According to the invention, because the thickness of the periphery if the clip grooves is made smaller than the thicknesses of other locations, even if the density of the periphery thereof becomes nonuniform, no cracks occur on the periphery thereof at the placement of the molded article in the saga and the sintering thereof. Thereby, the joining of the split core can be easily and reliably performed.

[Brief Description of the Drawings]

[Fig.1]

Fig.1 is a cross-sectional front view illustrating a working example, cut along a BB surface.

[Fig.2]

Fig.2 is a cross-sectional view cut along a CC line of Fig.1.

[Fig.3]

Fig.3 is a cross-sectional view illustrating the other working example, cut along a line equivalent to the BB line of Fig.1.

[Fig.4]

Fig.4 is a cross-sectional front view illustrating prior art deflection yoke core, cut along an AA surface.

[Fig.5]

Fig.5 illustrates a lower surface of Fig.4.

[Fig.6]

Fig.6 is a cross-sectional view illustrating a sintered state.

[Description of the Reference Numbers]

1...Deflection yoke core

2...Splitting groove

3 and 4...Split cores

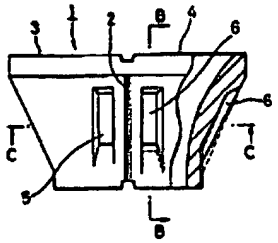
5 and 6...Clip grooves

7...Clip

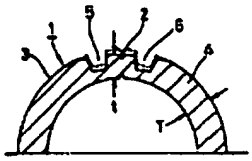
8...Saga

9...Support hole

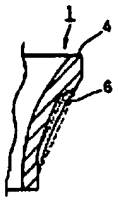
【図1】



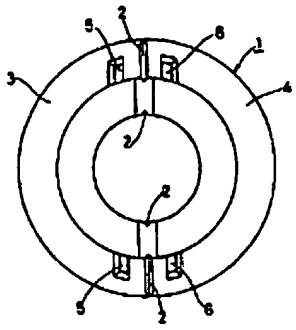
【図2】



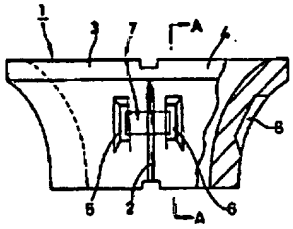
【図3】



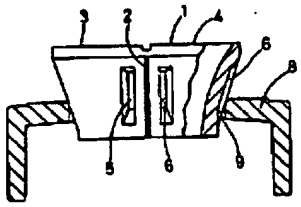
【図5】



【図4】



【図6】



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